

REMARKS

Reconsideration and allowance are requested.

Claims 1-6 remain pending and under consideration, with claims 1 and 6 being independent.

The specification has been amended in two instances to correct typographical errors. Attached is a marked-up version of the changes being made by the current Response.

For the reasons set forth at pages 2-7 of the office action, claims 1-6 stand rejected under 35 USC 103(a) as allegedly being unpatentable over various combinations of Brailsford (USP 4,475,068), Posey (USP 5,293,523), Bornand (USP 5,605,614), Ho (USP 5,629,918) and Tanikoshi (USP 3,900,780). These rejections and their underlying rationale are traversed.

In the Amendment filed in this application on January 8, 2001, independent claims 1 and 6 were amended to recite a MEMS relay having a magnetic actuation plate or a springing beam that is formed with permalloy material to provide high plating capability. The Remarks section of that Amendment explained that "A soft magnetic material such as permalloy has a high saturation magnetization (M_s greater than 0.8 Tesla), has thick plating capability, and automatically magnetizes with the desired magnetization orientation when actuated. Therefore, materials such as permalloy can be advantageous for constructing

the magnetic actuation plates." (See the specification at page 11, lines 6-11.) For example, "[f]orces in excess of 5 mN are easily obtained with a permalloy actuation plate having a width of 3 mm and a thickness of 10 μ m in a DC motor that produces a magnetic field strength of approximately 2500 gauss." (See the specification at page 11, lines 11-14). Accordingly, independent claims 1 and 6 were amended to recite a feature that is nowhere disclosed or suggested in the art of record and which, as discussed in the specification, provides advantages over prior art devices.

At page 6 of the final office action dated March 29, 2001, the Examiner apparently agrees (based on the conspicuous absence of a cited reference) that the art of record fails to disclose or suggest a MEMS relay having a magnetic actuation plate / springing beam that is formed with permalloy material as recited in claims 1 and 6, respectively. Nevertheless, despite the lack of a reference disclosing or suggesting this feature, the Examiner rejected the claims asserting that...

"[I]t would have been obvious to one having ordinary skill in the art at the time the invention was made to make the magnetic actuation plate / springing beam of a permalloy material since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice."

Office action at 6 (citing In re Leshin, 125 USPQ 416 (CCPA 1960)).

It is respectfully submitted that the Examiner is misapplying the law and taking an impermissible short-cut in rejecting the claims. Contrary to the Examiner's apparent belief, Leshin did **not** hold that using a particular material for a component in an apparatus is *per se* an obvious design choice. Rather, Leshin stands for the unremarkable proposition that modifying a prior art device by merely substituting one type of material for another type of essentially the same material without any corresponding advantage arising therefrom cannot impart patentability on an otherwise unpatentable claim. In that regard, the Leshin court stated that "Mere selection of known plastics to a container-dispenser **of a type made of plastics prior to the invention**, the selection of plastics being on the basis of suitability for the intended use, would be entirely obvious." Leshin, 125 USPQ at 417-18 (emphasis added).

The holding of Leshin is inapplicable to the present application. As noted above, independent claims 1 and 6 have been amended to recite a feature (i.e. a magnetic actuation plate / springing beam that is formed with permalloy material) that is clearly described in the specification as imparting a concrete and tangible advantage. There is no dispute that the

art of record fails to disclose or suggest the use of permalloy materials to form a magnetic actuation plate / springing beam. Consequently, the Examiner cannot ignore this claim feature by summarily stating that it is a mere design choice. Rather, the Examiner must either allow the claims as presented or establish a proper *prima facie* case of obviousness by producing one or more prior art references that teach the claimed features and further identifying a suggestion in the prior art for combining those references. Because the Examiner has not done this, the outstanding 103(a) rejection of claims 1 and 6 is defective and must be withdrawn.


In the same vein, it is submitted that the Examiner's assertion that a key claim feature is obvious, without any citation in support thereof, is an improper use of official notice. As explained in MPEP 2144.03, official notice can properly be used only to establish facts that capable of "instant and unquestionable demonstration as being well-known." In re Ahlert, 424 F.2d 1088, 1091 (CCPA 1970). Moreover, official notice may be used only to "fill the gaps" and cannot be used as "the principal evidence upon which a rejection is based," Ahlert, 424 F.2d at 1088. Yet this is exactly what the Examiner has done in rejecting claims 1 and 6. Accordingly, applicants hereby challenge the Examiner's assertion of

obviousness at page 6 and request the Examiner either to retract the assertion or to cite a prior art reference in support of the assertion. See MPEP 2144.03 ("If the applicant traverses such an assertion the examiner should cite a reference in support of his or her position.").

Applicants asks that all claims be allowed. Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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Version with markings to show changes made

In the specification:

Paragraph beginning at page 12, line 6, has been amended as follows:

The second substrate 305 (FIG. 3C) includes a contact layer 325. A permanent spacing layer 330 is deposited and patterned over a portion of the contact layer 325. Alternatively, the spacing layer 330 is formed directly on the substrate [300] 305. The height of this spacing layer 330 is determined by the desired gap distance between the contact layers 320, 325. As shown in FIG. 3C, the substrates 300, 305 are bonded or clipped together to form a switch. One or more bond wires 335, 340 are connected to the magnetic actuation plate 310 on the first substrate 300 and to the contact layer 325 on the second substrate 305.

Paragraph beginning at page 18, line 12, has been amended as follows:

FIG. 6 shows a DC motor 600 having a commutation circuit that includes micromachined magnetostatic relays 602, 604, 606 like those described above. In this example, the motor 600 is a four-pole, three-phase brushless motor having three pairs of

primary and secondary windings A-A', B-B', C-C'. The windings in each pair are positioned on opposite sides of the motor housing 608 and are separated by a magnetic rotor 610 having four poles. The relays 602, 604, 606 here are shown in relative positions in which they are spaced by angles of 120° and are placed in close proximity to stator poles. Absolute positioning of the relays 602, 604, 606, and even the number of relays, depends on the particular motor and wiring implementation with which they are used. More complex commutation techniques involving micromachined relays include H-bridge circuits, zener diode shunts, and other electronics. The particular commutation circuit used depends on the desired performance and lifetime characteristics for the motor in a particular application.